

**MATERIAL SAFETY DATA SHEET
FOR
THORN SMITH LABORATORIES
ANALYZED QUANTITATIVE UNKNOWNNS**

Soluble Antimony (Tartar Emetic) for Sb
Catalog Number 80-1545

Manufacturer: Thorn Smith Laboratories
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Beulah, MI 49617
Phone Number: 231-882-7251
MSDS Number: TSL-001
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SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS - Chemical Name & Common Names
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Antimony Potassium Tartrate

Formula: $K(SbO)C_4H_4O_6 \cdot 1/2H_2O$

Formula Weight: 324.93

CAS No.: 28300-74-5

Synonyms: Potassium Antimony Tartrate, Tartar Emetic, Tartrated Antimony, Tartox, Tartaric Acid, Antimony Potassium Salt, Antimony Potassium Tartrate Solid, Tartarized Antimony, Potassium Antimonyl Tartrate, Potassium Antimonyl D-Tartrate

Chemical Family: Organometallic

OSHA PEL: 0.5mg(SB)/M³

ACGIH TLV: 0.5mg(SB)/M³

OTHER LIMITS: 0.5mg(SB)/M³ NIOSH recommended TWA 100 pounds CERCLA Section 103 reportable quantity.

Sodium Sulfate

Formula: Na_2SO_4

Common Synonyms: Sulfuric Acid, Disodium Salt; Disodium Sulfate

Chemical Family: Inorganic Sodium Compounds

CAS No.: 7757-82-6

OSHA PEL: According to our sources, exposure threshold levels have not been established (N/E).

ACGIH TLV: N/E

OTHER LIMITS: N/A

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point: N/A

Specific Gravity (H₂O=1) approximately 2.6 @ 20°C (K(SbO)C₄H₄O₆□1/2H₂O); 2.68 (Na₂SO₄)

Vapor Pressure (mm Hg and Temperature): N/A

Melting Point: Loses H₂O at 212°F (K(SbO)C₄H₄O₆□1/2H₂O); 884°C (1623°F) (Na₂SO₄)

Vapor Density (Air=1): N/A

Evaporation Rate (=1): N/A

Solubility in water: 8.3% (K(SbO)C₄H₄O₆□1/2H₂O); Appreciable (More than 10%) (Na₂SO₄)

Water Reactive: No

Appearance and Odor: White powder or colorless crystals with a sweet, metallic taste (K(SbO)C₄H₄O₆□1/2H₂O); white crystals or powder (Na₂SO₄). Odorless.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used: N/A

Auto-Ignition Temperature: N/A

Flammability Limits in Air (% by Volume): N/A

LEL: N/A

UEL: N/A

Extinguisher Media: Dry chemical, carbon dioxide, water spray or regular foam. For larger fires, use water spray, for or regular foam.

Special Fire Fighting Procedures: Move container from fire area if you can do it without risk. Extinguish using agent indicated; keep upwind, avoid breathing vapors or dust. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in the positive pressure mode.

Unusual Fire and Explosion Hazards: Toxic gases produced: sulfur dioxide (Na₂SO₄).

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable Unstable

Conditions to Avoid: Humidity. Stable under ordinary conditions of use and storage.

Incompatibility (Materials to avoid): Acacia, Acids, Alkalies and their carbonates, Antipyrine, Astringent infusions, Halogenated acids, Lead salts, Mercury Bichloride, Oxidizers, Tannic Acid, Trivalent Antimony and Perchloric Acid (K(SbO)C₄H₄O₆□1/2H₂O); Aluminum, magnesium, mineral acids, strong acids, strong bases (Na₂SO₄).

Hazardous Decomposition Products: Oxides or sulfur may form when heated to decomposition (Na₂SO₄).

HAZARDOUS POLYMERIZATION: May Occur Will Not Occur

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:

Inhalation Ingestion Skin Contact
 Eye Contact Not Hazardous

CARCINOGEN LISTED IN:

NTP OSHA IARC Monograph Not Listed

TOXICITY:

Antimony Potassium Tartrate: 2 mg/kg Oral-Human LDLO; 115 mg/kg oral-rat LD50; 600 mg/kg Oral-Mouse LDLO; 115 mg/kg oral-rabbit LD50; 55 mg/kg subcutaneous-mouse LD50; 1392 ug/kg intravenous-human TDLO; 12 mg/kg/1 week intermittent intravenous-human TDLO; 249 mg/kg/9 days intermittent intravenous-man LD50; 45 mg/kg intravenous-mouse LD50; 12 mg/kg intravenous-rabbit LD50; 11 mg/kg intraperitoneal-rat LD50; 33 mg/kg intraperitoneal-mouse LD50; 15 mg/kg intraperitoneal-guinea pig LD50; 33 mg/kg intramuscular-rat LDLO; 55 mg/kg intramuscular-guinea pig LDLO; mutagenic data (RTECS).

Sodium Sulfate: LD50 (oral-mouse) 5989 mg/kg.

HEALTH HAZARDS - Acute:

Inhalation: Irritant. 80 mg (Sb)/M³ immediately dangerous to life or health. Inhalation may cause mucous membrane irritation with sore throat, coughing and dyspnea (K(SbO)C₄H₄O₆·1/2H₂O); May cause irritation to upper respiratory tract (Na₂SO₄).

Ingestion: May cause violent irritation of the nose, mouth, stomach and intestines, nausea, vomiting, severe diarrhea with mucous and blood and abdominal cramps, slow and shallow respiration, pulmonary congestions, muscular pain, shock, collapse and coma may occur. Death may occur due to circulatory and respiratory failure a few hours following ingestion. Human pathologic findings may include ulcerations of the esophagus and stomach. In subacute cases, fatty degeneration of the liver, kidney, and heart may be present (K(SbO)C₄H₄O₆·1/2H₂O); May cause gastrointestinal irritation (Na₂SO₄).

Skin Contact: May cause irritation with redness and pain. Keratitis and ulceration have been reported from exposure to antimony compounds (K(SbO)C₄H₄O₆·1/2H₂O). May cause irritation (Na₂SO₄).

HEALTH HAZARDS - Chronic:

Antimony Potassium Tartrate

Ingestion: Repeated or prolonged ingestion of antimony compounds may cause nausea, anorexia, headache, sleeplessness, dizziness and lowered body temperature. Liver and kidney degenerative changes including hemorrhagic nephritis and hepatitis with jaundice are late manifestations. Chronic incorporation of antimony potassium tartrate at 5 PPM into drinking water increased the mortality rate and decreased serum glucose levels in rats.

Skin Contact: Repeated and prolonged contact with antimony compounds may cause dermatitis and papules, pustules or lesions on exposed moist areas of the body, rarely including the facial region.

Eye Contact: Repeated or prolonged contact with irritants may cause conjunctivitis.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: Hepatic Disease.

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for

further treatment, observation and support if necessary.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately. (K(SbO)C₄H₄O₆□1/2H₂O)

Ingestion: Remove ingested antimony compounds by gastric lavage or emesis. Do not perform gastric lavage or emesis if victim is unconscious. Get medical attention immediately. TREATMENT SHOULD BE PERFORMED BY QUALIFIED MEDICAL PERSONNEL ONLY. (K(SbO)C₄H₄O₆□1/2H₂O)

ANTIDOTE: The following antidote has been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.

ANTIMONY POISONING:

ADMINISTER DIMERCAPROL, 3 MG/KG every 4 hours for the first 2 days and then 2 mg/kg every 12 hours for a total of 10 days. Dimercaprol is available as a 10% solution in oil for intramuscular administration. Antidote should be administered by qualified medical personnel. (K(SbO)C₄H₄O₆□1/2H₂O) If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention. (Na₂SO₄)

Skin Contact: Remove contaminated clothing and shoes immediately, wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). In case of chemical burns, cover area with sterile, dry dressing, bandage securely, but not too tightly. Get medical attention immediately. (K(SbO)C₄H₄O₆□1/2H₂O) In case of contact, immediately wash skin with plenty of soap and water for at least 15 minutes. (Na₂SO₄)

Eye Contact: Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes). Continue irrigating with normal saline until the pH has returned to normal (30-60 minutes). Cover with sterile bandages. Get medical attention immediately. (K(SbO)C₄H₄O₆□1/2H₂O) Immediately flush with plenty of water for at least 15 minutes. (Na₂SO₄)

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Acute: Yes Chronic: Yes Flammability: No Pressure: No Reactivity: Yes (K(SbO)C₄H₄O₆□1/2H₂O)

Extremely Hazardous Substance: Yes (K(SbO)C₄H₄O₆□1/2H₂O)

CERCLA Hazardous Substance: Yes (K(SbO)C₄H₄O₆□1/2H₂O)

SARA 313 Toxic Chemicals: Yes

TSCA Inventory: Yes

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type): Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 15 ppm, a high-efficiency particulate respirator is recommended. Above this level, a self-contained breathing apparatus is advised.

Protective Gloves: Wear rubber gloves.

Eye Protection: Wear chemical safety goggles.

VENTILATION TO BE USED: Use adequate general or local exhaust ventilation to meet TLV requirements.

Local Exhaust Mechanical (General) Special
 Other (Specify)

Other Protective Clothing and Equipment: Wear clean body-covering clothing.

Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep container closed when not in use. Use with adequate ventilation. Store away from incompatibles. Wash thoroughly after handling.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

Steps to be taken if material is spilled or released: Wear self-contained breathing apparatus and full protective clothing.

Soil Spill: Dig a holding area such as pit, pond or lagoon to contain spilled material. Use protective cover such as a plastic sheet to prevent dissolving in firefighting water or rain. (Antimony Potassium Tartrate)

Air Spill: Vapors or dust are irritating or toxic. (Antimony Potassium Tartrate)

Water Spill: Neutralize with caustic soda. (Antimony Potassium Tartrate)
If material is dissolved, use sodium sulfide solution to precipitate heavy metals.

Reportable Quantity: 100 pounds

Waste Disposal Methods: Dispose in accordance with all applicable local, state, and federal environmental regulations.

Precautions to be taken in handling and storage: Keep in a tightly closed container. Isolate from incompatible materials. Protect against physical damage. Store in accordance with all applicable local, state and federal environmental regulations.

Other precautions and/or special hazards: Material is hygroscopic.

NFPA Rating: Health: **2** Flammability: **0** Reactivity: **0**.

HMIS Rating: No information available.

SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

International (T.M.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

AIR (I.C.A.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

Per section 172.101 of 49 CFR Chapter 1, this material is a mixture of a hazardous material and a non-hazardous material and can be shipped as a n.o.s. Actual mixture quantities are identified on the analysis sheet which accompanies every shipment.

The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and assume no liability resulting from its use. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.